

II.—*Further Notes on the Nesting of Birds in the Province of Fohkien, S.E. China.* By J. D. LA TOUCHE, C.M.Z.S., M.B.O.U., and C. B. RICKETT, F.Z.S., M.B.O.U.

THE following notes deal with the birds nesting on the plains and lower hills of the Province. Those breeding on the mountains have already been dealt with by La Touche (see 'Ibis,' 1899, pp. 169-210, 400-431; 1900, pp. 34-51).

The districts mentioned in this paper under the names of Yuen Fu Valley, Peling District, and the Plains may be taken to include the country from the sea-level up to 1000 feet.

Central Fohkien relates to the country around Ching Feng Ling and Yamakan ('Ibis,' 1897, p. 600; 1900, p. 52), which ranges from 1500 to 2500 feet.

The Yuen Fu River is a feeder of the Min River (on which the city of Foochow stands), and enters it about 35 miles from its mouth.

CORVUS TORQUATUS LESS.

The Common Crow of Foochow. It is an early breeder. We have had callow young brought to us on February 23rd, and Rickett procured a clutch of eggs almost ready to hatch taken on January 26th.

The nest is nearly always placed high up in a tall pine-tree. It is composed of sticks, some of which are of considerable size, with an inner layer of finer twigs and a lining of dry grass and pine-needles. The eggs are very variable in size, shape, and colouring. The ground-colour is light green or bluish green, more or less blotched, spotted, or speckled with sap-green, and there are generally underlying spots of dull reddish grey or violet-grey.

The most common shape of the eggs is ovate, but pyriform ovate, elongated ovate, and almost oval eggs also occur. Thirty-nine specimens average 1.67×1.19 in. : the largest 1.82×1.25 , the smallest 1.51×1.17 .

CORVUS MACRORHYNCHUS Wagler.

Less common than *C. torquatus* and a much later breeder. It commences building about the end of March or the beginning of April. We have only one egg of this species, taken on April 25th from a nest in a tall pine. It is ovate with a very pointed apex. In colour it is light bluish green, blotched and longitudinally streaked with sap-green. There are a few underlying markings of grey.

It measures 1.71×1.17 in.

PICA CAUDATA Linn.

The Magpie is also an early breeder, and may be seen carrying sticks at the end of December. We have, however, eggs dated as late as April 2nd. Some taken in May were probably of a second laying.

The nest needs no description. As the natives consider the bird lucky they do not molest it, in consequence of which it builds in most exposed and often easily accessible sites.

Forty-six eggs average $1.37 \times .98$ in. : the largest 1.49×1.02 , the smallest $1.2 \times .96$.

UROCISSA SINENSIS (Linn.) : Ibis, 1900, p. 40.

This species breeds in the plains. The eggs have already been described by La Touche.

The nest is composed of twigs and tough tendrils, lined with roots and dead leaves or a little dry grass.

Rickett once watched a bird "shewing off" to its mate as they sat in a tall tree. It puffed out the feathers of the head and neck, raised its tail which was spread like a fan, and turned its body slowly from side to side.

DENDROCITTA SINENSIS (Lath.).

Although a common resident on the wooded hills, we have never obtained its eggs.

La Touche does not mention it in his paper on "The Birds of North-west Fohkien" ('Ibis,' 1899-1900).

GARRULUS SINENSIS Gould : Ibis, 1899, p. 39.

Common on the lower wooded hills of the Province.

We have nothing to add to what La Touche has already written as to its eggs and nests taken at Kuatun.

PARUS ATRICEPS Horsf.

This Tit occurs near Foochow, but is not nearly so common as *P. minor*.

A nest with six eggs was taken from a hole in a bank. It was a fairly neat cup, composed externally of a thin layer of moss, and lined with hair, buffalo-wool, and a few feathers felted together. The eggs averaged $\cdot 65 \times \cdot 48$ in.; they were white, spotted with light red. The female was caught on the nest.

PARUS MINOR T. & S. : Ibis, 1899, p. 401.

This very common resident nests in all parts of the Province from the plains up to 3000 or 4000 feet on the mountains of the North-West.

The nest is placed in a hole in a tree, wall, or bank. One was built in a Chinese grave, the birds entering through a small aperture like a mouse-hole on a level with the ground. The materials used are moss, wool, hair, pigs' bristles, feathers, fine dry grass, roots, and fibres; these are sometimes carelessly arranged in a loose shallow cup or mere hollowed pad; at other times they are worked up into a firm compact felt. One nest taken near Foochow resembled in shape the toe portion of a bath-slipper.

On the plains nesting begins about the end of March and two broods are reared in a season. Eggs average $\cdot 65 \times \cdot 50$ in.; they are white, spotted and speckled with pale red.

ACREDULA CONCINNA (Gould).

Acredula concinna Styan, Ibis, 1891, p. 342; La Touche, Ibis, 1899, p. 403.

We have not obtained the eggs of this common Tit near Foochow.

Rickett found a nest in a young pine-tree when Pheasant-shooting up the Yuen Fu River in November, which was similar to the specimen obtained by La Touche at Kuatun.

Young broods are to be seen early in May.

MELANOCHLORA SULTANEA (Hodgson).

The natives at Yamakan, Central Fohkien, say that this

species breeds there in holes in trees and lays spotted eggs. Our collectors, however, did not obtain any specimens of them.

PARADOXORNIS GUTTATICOLLIS David.

No doubt breeds in Central Fohkien, but we have no specimen of its egg.

GARRULAX PICTICOLLIS Swinhoe.

This species no doubt nests in Central Fohkien, where it is common in winter.

We have, however, no specimen of its egg.

DRYONASTES PERSPICILLATUS (Gm.) : Ibis, 1887, p. 218.

We have taken but four nests of this common resident. There are two, or perhaps three, broods in the season, as we have taken eggs as late as July 11th.

A nest found on May 9th was placed in a large thorny bush eight or ten feet from the ground. It was composed of hard wiry tendrils, within which was a layer of dead leaves, and then a layer of straw, that shewed conspicuously all round the edge, giving the nest the curious appearance of having a straw binding. The lining was of pine-needles. Another nest, built in a small tree, was composed of coarse grass, roots, and a few small twigs, lined with fine dry grass.

The nests are 6 or 7 inches in external diameter, 4 inches in internal diameter. In depth they are 4 inches externally and 2 to 3 inches internally.

Eight eggs average $1.10 \times .85$ in.: they are delicate greenish white in colour and, as a rule, very glossy, but the texture is uneven; in shape they are more or less oval. There are three or four eggs in a clutch.

DRYONASTES SANNIO (Swinhoe).

We have never obtained the eggs of this common resident species. Two young birds just able to fly were shot in the Yuen Fu Valley on May 18th. They resembled the adults, but were much duller in colour.

TROCHALOPTERON CANORUM (Linn.) : Ibis, 1899, p. 180.

Breeds commonly about Foochow. La Touche procured

a nest with eggs at Peling as already recorded ; but that is the only one obtained by us near Fooehow.

IANTHOCINCLA CINEREICEPS (Styan) : *Ibis*, 1899, p. 181.

This bird also breeds in the Ching Fung Ling district, where our collectors found nests with young.

POMATORHINUS STRIDULUS Swinhoe : *Ibis*, 1887, p. 218 ; 1899, p. 183.

We have young birds shot in the Yuen Fu Valley in May.

A nest obtained in Central Fohkien was composed of bamboo-leaves and fern-fronds, lined with fine dry grass. It was probably damaged in the taking, as it was a flimsy cup without the usual dome. The native who took it said that it was just as he found it, and Hume gives instances of birds of this genus sometimes building open nests ('Nests and Eggs,' vol. i. pp. 81, 83, & 88). It contained two eggs, measuring $\cdot 92 \times \cdot 67$ and $\cdot 89 \times \cdot 69$ in. : they were ovate in shape, somewhat blunt at the smaller end ; pure white, smooth, and slightly glossy in texture, with very thin shells.

ALCIPPE HUETI David : *Ibis*, 1899, p. 185.

Breeds on the hills and mountains of the Province.

A nest taken by Rickett's collectors in Central Fohkien contained four very abnormally-coloured eggs. The skin of the old bird, shot from the nest, places their identity beyond doubt. These four eggs (taken on April 29th) are pink, somewhat thickly marked with specks and short streaks of darker pink. Two of them have a well-marked ring round the larger end, in another the ring is still more strongly marked, while the fourth has no trace of a ring ; they measure $\cdot 76 \times \cdot 56$ in. Two other clutches obtained at the same time are normally coloured and average $\cdot 75 \times \cdot 58$ in. The nests are much the same as those already described by La Touche.

Two broods are apparently reared in a season.

SCHÆNIPARUS BRUNNEUS (Gould).

A common resident species in suitable localities.

We have, however, only once obtained its nest and eggs.

On April 24th our collectors took a nest in Central Fohkien. It was a domed or semi-domed structure, very loosely put together and composed of dead leaves, lined at the bottom with dry grass. It measured in diameter externally 4 inches, internally 2 inches; it was $5\frac{1}{2}$ inches in external depth and 3 inches in depth of egg-cavity.

The eggs, four in number, measure $.79 \times .62$, $.81 \times .62$, $.81 \times .62$, and $.84 \times .62$ in. The ground-colour is greenish white, clouded and blotched with pale brown, over which are dark specks and short lines of deep vandyke-brown, almost black. The underlying markings (which in one egg form a small cap on the larger end) are blue-grey. In shape the eggs are ovate, with a rather broad apex. In style of markings they call to mind those of *Alcippe hueti* ('Ibis,' 1899, p. 185).

STACHYRIDOPSIS RUFICEPS (Blyth) : Ibis, 1899, p. 186.

A common resident on the wooded hills and mountains of the Province. Two nests taken in Central Fohkien on April 26th and 30th, and containing two and four eggs respectively, do not differ in any respect from those already described.

In 'The Ibis' for 1899, p. 186, La Touche drew attention to the difference between the Formosan and Fohkien birds. He noticed also a marked difference between these two races and the Indian bird, but as the Paris Museum at that time possessed only one Indian skin, he took no note of what those points of difference were.

Since then, Ogilvie-Grant (P. Z. S. 1900, p. 476) has recorded his observations on the subject, but apparently does not think the races worthy of separation.

MYIOPHONEUS CÆRULEUS (Scop.) : Ibis, 1899, p. 178.

Four nests from Central Fohkien, taken early in May, were composed of twigs, moss, roots, and dead leaves, lined with roots and dead leaves. These birds probably breed twice in the season, as a nearly finished nest was found on June 27th. The eggs have already been described. Thirteen average $1.34 \times .97$ in.

This species is a common resident in the Province wherever there are streams flowing among rocks and boulders.

ZOSTEROPS SIMPLEX Swinhoe: Ibis, 1898, p. 367; 1899, p. 431.

Common and resident on the low grounds, but apparently rare on the higher levels.

The nests vary a good deal in the amount of materials employed in the construction, some being little more than a frail network of fine dry grass bound together and secured to the supporting twig by cobwebs, while others are quite substantial little cups of moss, fine dry grass, roots, and fibres. They are either slung like a hammock in the fork of a twig or attached to the side of one. They measure about 2 inches in diameter.

The eggs are pale greenish blue, and average $.60 \times .47$ in. There are three or four in a clutch.

Some caged birds of this species kept by La Touche became grey above in the place of green; the reddish flanks turned deeper in shade, while the yellow throat faded almost to white.

CHLOROPSIS LAZULINA (Swinhoe).

HYSIPETES LEUCOCEPHALUS (Gm.).

HEMIXUS CANIPENNIS Seebohm.

SPIZIXUS SEMITORQUES Swinhoe.

IOLE HOLTI (Swinhoe).

The five above-mentioned species are all more or less common in Central Fohkien in winter, and some of them, if not all, most probably nest in that district.

PYCNONOTUS SINENSIS (Gm.): Ibis, 1898, p. 366.

This common resident appears to be mostly confined to the low levels. It builds in bushes, low trees, hedges, low bamboos, and creepers on walls. The nest is never far from the ground, and is composed of a variety of materials, viz., fine twigs, dry grass, dead and skeleton leaves, roots, moss, feathers, paper, &c., lined with fine dry grass, roots, hair, pine-needles, and often the seeding tops of "sword-grass." Some nests are composed entirely of the latter, and are then

very firm and compact. When composed of other materials, they are often loose untidy structures. This species frequently builds in gardens close to the houses. Rickett notes that the female seems to do all the work of building, the male singing near her and driving away any bird that approaches the site. The nest is cup-shaped and measures externally 4 or 5 inches in diameter, and from $2\frac{1}{2}$ to 4 inches in depth. The internal diameter is about 3 inches and the depth 2 inches.

There are two or three broods in a season. The eggs, usually three or four in number, vary a good deal in appearance. They are pale mauve or mauve-white, spotted or blotched with lavender-grey and claret-colour or crimson-lake over paler red. Some eggs are more lightly marked with speckles. The markings are usually denser at the larger end. The most usual shape is ovate.

Thirty-one eggs averaged $\cdot88 \times \cdot64$ in. : the largest of these was $\cdot90 \times \cdot70$, the smallest $\cdot84 \times \cdot60$.

It is not at all unusual to find a piece of a snake's slough worked into a nest, and some are rendered very conspicuous by the bits of white paper used in their construction.

Young birds assume the adult plumage at the first autumn moult, previous to which the head is ashy, paler on the ear-coverts and hind-neck; the back and wing-coverts are ashy-brown; the quills and tail-feathers are edged with olive-yellow on the outer webs; the throat is white, as are the under parts, which are tinged with yellow, while a pale ashy band crosses the chest.

PYCNONOTUS ATRICAPILLUS (Vieill.).

A common resident about Amoy, but a rare straggler in winter as far north as Foochow.

La Touche does not appear to have taken its eggs when at Amoy.

BUCHANGA LEUCOGENYS Walden.

A common summer-visitor to the plains, arriving in April and leaving in September or October.

Nesting commences early in May. Possibly two broods

are reared in a season, as we obtained a clutch of eggs, nearly ready to be hatched, in July. The nest is placed in a fork near the end of a horizontal branch of some tall pine or other tree, usually at a good height from the ground. It is a shallow cup, very well finished with thick substantial sides, but very thin at the bottom, so much so that as a rule the eggs practically rest on the branch. The materials used are fine twigs, pine-needles, fine dry grass, roots, and tendrils. These are strongly bound together with cobwebs, to which the bird attaches lichens and moss. The lining is generally of pine-needles, but at times fine dry grass, roots, fibres, and hair are used.

The average measurements of twenty-one nests are as follows:—Outer diameter 5 inches, inner about 3; outer depth about 2, inner $1\frac{1}{4}$.

The eggs vary a good deal, but are generally referable to one of the four following types:—

- (a) Pinkish white, with rather large spots or blotches of crimson over underlying spots of lavender-grey.
- (b) Delicate creamy pink, with small, roundish, dark crimson and underlying lavender-grey spots.
- (c) More or less pale yellowish pink, with large and irregular or small round spots of pale crimson, or pale pinkish red. The underlying markings are as in (a) and (b).
- (d) Pale orange, with a few very pale red blotches and underlying blotches of lilac-grey.

In La Touche's collection are three or four clutches which differ somewhat from those described, the most abnormal being one of a greenish-white ground-colour, with a few spots and specks of washed-out reddish brown over dull greyish-pink specks.

The markings are generally closer at the larger end, and are seldom, if ever, numerous. The shell is smooth and without gloss, except in much incubated specimens. In shape the eggs are variable, but are most commonly ovate.

The clutch usually consists of four; only once have we met with five eggs in a nest.

Eighty-two eggs average $\cdot96 \times \cdot74$ in. : the largest $1\cdot04 \times \cdot76$, the smallest $\cdot86 \times \cdot68$.

The parents attack and drive away with great fury any Kite, Crow, or Magpie that passes near the nest-tree, displaying at such times great power and command of wing. It was when our men were taking the eggs that we saw these powers to perfection, as the birds swept swiftly but silently to and fro among the branches, now and again darting towards the nest as if to defend it.

CHIBIA HOTTENTOTA (Linn.).

A summer visitor, breeding on the plains and in Central Fohkien. The nests are, so far as our experience goes, always placed in bamboos at a height of from fifteen to twenty feet from the ground. They are slung to two or three sprays near the top, and can only be obtained by carefully cutting down the canes.

The nests, though flimsy in appearance, are strongly built of fine twigs, tough roots, and tendrils, with occasionally some dry grass, moss, or dead leaves, those from Central Fohkien being more substantial than others taken in the Yuen Fu Valley.

The eggs are laid in May or early in June. They are four or five in number, and vary but little in shape, being usually ovate. The ground-colour is more or less deep pinkish creamy. The markings are, as a rule, as follows:—

- (a) Blotches or speckles of pale red over underlying spots and blotches of reddish lilac.
- (b) Speckles of pale red over lavender-grey specks.
- (c) Same as the last, but the marks are short streaks and V-shaped spots.
- (d) Sparsely speckled with very dark crimson or madder-brown over spots of violet-grey.

Forty-four eggs average $1\cdot14 \times \cdot82$ in. : the largest $1\cdot26 \times \cdot84$, the smallest $1\cdot02 \times \cdot80$.

ORTHOTOMUS SUTORIUS (Forst.).

This very common resident species appears to confine itself to the plains. It nests in the groves of fruit-trees in the

valleys, and in gardens, building as a rule low down in some bush or small tree ; but creepers on walls, crotons growing in pots, and the leaves of arum lilies are also resorted to. In the latter case the edges of a leaf are sewn together, and in the cone thus formed the nest is placed. As a rule, two leaves are used, but Rickett once found a nest in a small-leaved creeper on a wall, where five or six leaves had been drawn together. The materials used are wool, cotton, moss, hair, fine roots, and vegetable fibres.

One morning a Tailor-bird entered Rickett's room, and picking up a piece of cotton-wool that was lying on the floor carried it to the verandah-rail. Holding the cotton under its feet, it proceeded, by means of its bill, to spin it into a piece of thread, with which it flew off.

Three eggs are usually laid, but four and five may be found. They are of two types of colouring :—

- (a) Pale green, with large blotches of two shades of pale brick-red over underlying spots of a somewhat violet-red.
- (b) Pale bluish green, with small spots of madder-brown, almost wholly confined to the larger end.

Twenty-two eggs average $\cdot 63 \times \cdot 46$ in. : the largest $\cdot 67 \times \cdot 47$, the smallest $\cdot 59 \times \cdot 45$.

The old birds exhibit great anxiety when the nest is approached, and flit about restlessly, uttering an incessant nervous " *twit, twit, twit.* "

SUYA CRINIGERA Hodgson : Ibis, 1899, p. 187.

La Touche has already described nests of this bird taken by him at Peling. It no doubt breeds also in Central Fohkien.

SUYA SUPERCILIARIS Anderson.

This species was first recorded as Chinese by Rickett in 'The Ibis' for 1894, p. 218.

A nest sent to him in May by Dr. Stenhouse, R.N., may pretty safely be assigned to it. The parent bird was shot, but, being a good deal damaged, Dr. Stenhouse unfortunately threw it away. He said that it had a conspicuous white stripe

over the eye, and on being shown the plate in Anderson's 'Yunnan Expedition,' stated that he was sure that it was the same bird. The nest was placed low down in a young pine, and was partly concealed by the rank grass growing round it. In shape it was a long blunt oval, with a large opening near the top, and was of flimsy construction. Its measurements were as follows:—Height at back 8 inches, external diameter $3\frac{1}{2}$, depth of egg-cavity $2\frac{3}{4}$.

The materials used were moss and the seeding tops of grasses, with a few dead leaves and some cocoon-silk.

The eggs (which were very heavily incubated) were pale green marked with tiny red specks, most numerous at the larger end, where they formed a small zone.

PRINIA INORNATA Sykes: Ibis, 1898, p. 360.

This common resident breeds on the plains and low hills of the Province. The well-known nests are built in clumps of coarse grass, bamboos, and wheat-fields.

There are two types of eggs:—

(a) With the usual light greenish-blue ground-colour.

(b) With a green ground-colour.

The markings do not vary much.

Thirty eggs average $.59 \times .44$ in.: the largest $.63 \times .45$, the smallest $.56 \times .40$.

PRINIA SONITANS Swinhoe: Ibis, 1898, p. 359.

Common on the low hills.

The nest is, as a rule, a little less flimsy-looking than that of *P. inornata*. It is composed of the seed-spikes and down of grasses or of fine dry grass, with occasionally some cobwebs, cocoon-silk, or a few leaves intermixed, and is always slightly lined at the bottom of the egg-cavity with very fine dry grass, roots, or hair. The shape varies somewhat—one nest was a perfect oval with what might be described as a piece diagonally sliced off at one end; another had two openings opposite to each other, and resembled a small deep basket with a handle. The structure is usually placed in bamboos or among coarse grass, and is 5 or 6 inches in height, 3 or 4 inches broad, and from 2 to 3 inches deep.

Sixteen eggs average $\cdot60 \times \cdot45$ in.; they are pale red, heavily suffused with a darker shade.

LANIUS SCHACH Linn. : Ibis, 1894, p. 217.

This handsome resident species retires to the low brush-wood-covered hills in April for nesting-purposes. It builds in some thick bush, or clump of "sword-grass," a large, deep, and substantial cup-shaped nest of twigs, coarse roots, tendrils, bamboo-leaves, and dry grass, lined with fine dry grass and seeding grass-spikes.

The eggs are from four to six in number and ovate in shape.

A clutch taken by La Touche at Amoy were pale yellowish green, with irregular spots of pale brownish red of two or three shades over spots of two shades of reddish grey and lavender-grey. They had a cap of red surface-spots over confluent underlying blotches.

The markings in all the eggs which we obtained are most numerous at the larger end, where they tend to form a cap or ring.

Sixteen eggs average $1\cdot03 \times \cdot78$ in.

LANIUS FUSCATUS Less. : Ibis, 1894, p. 219.

The young birds described by the Rev. H. H. Slater were no doubt, as he wrote in the footnote to Rickett's article under this heading, "young *L. fuscatus* of pure blood."

We have never obtained the eggs of this species.

PERICROCOTUS CANTONENSIS Swinhoe.

A common summer-visitor to the plains, arriving early in April and leaving in October.

It commences building at the end of April or early in May. The nest is placed on the branch of a pine or some other tree, near to but not *in* a fork. It is a beautifully neat little cup, generally with perpendicular walls. The sides are thin, and there is often no real bottom, the eggs having only the thin lining materials between them and the branch. If taken in wet weather, or allowed to get damp, the nest becomes quite soft and gummy, regaining its firmness when

dry. The materials used are fine grass, moss, fibres, roots, and pine-needles, plastered over on the outside with cobwebs, to which are stuck lichens and a little moss. The lining is of fine fibres or roots.

The nests measure about $2\frac{3}{4}$ inches in external diameter, $2\frac{1}{4}$ inches internal diameter, and $2\frac{1}{4}$ inches in depth. Owing to their small size and to the covering of lichen they are not easy to find, especially when placed, as they usually are, high up in a tall tree.

The eggs are usually four in number and more or less ovate in shape. The ground-colour is bluish grey or pale greenish stone-colour, more or less spotted, speckled, or streaked with shades of brown, brownish red, pale earthy yellow, and purple, over underlying markings of lavender-grey. The markings are, as a rule, thicker at the larger end, where they form an ill-defined cap or ring.

Twenty-six eggs average $\cdot78 \times \cdot60$ in.

CAMPOPHAGA MELANOPTERA (Rüpp.).

Three eggs, taken on June 11th, measured $\cdot90 \times \cdot70$ in.

Our collectors took a nest (also in June) which contained a newly-hatched bird and an egg on the point of being hatched. The latter measured $\cdot95 \times \cdot69$ in. The nest was placed on a fork at the end of a branch. It was a mere pad, composed of pine-needles, fine leaf-stalks, and pale silvery-grey lichens, bound together with cobwebs. In shape it was an irregular oval, with a slight depression, less than half an inch in depth, for the eggs. It was $3\frac{1}{2} \times 4\frac{1}{2}$ inches in dimensions, with a maximum thickness of $1\frac{1}{2}$ inches.

The eggs are ovate in shape, with a bluish-white ground, thickly streaked and spotted longitudinally with brown and grey.

This species is a common summer-visitor to the plains and low hills, but being shy and silent attracts little notice.

ORIOLUS DIFFUSUS Sharpe.

Like the last species, this is a common summer-visitor to the plains.

The nest is placed in tall bamboos, large pines, or other

trees, always at a considerable height from the ground. It is a deep cup slung in the fork of a branch, and varies in shape and construction. In some cases the walls are very thick and the bottom thin, in others the reverse obtains; some specimens, again, are very substantial throughout. The materials used are bamboo-leaves, coarse and fine dry grass, straw, and seeding grass-spikes, bound together by roots, tendrils, and cobwebs. The latter and cocoon-silk are used to bind the nest to its supports. The lining consists of fine dry grass, pine-needles, roots, and seeding grass-spikes. Native paper forms a favourite finish to the nests: some are thickly coated with it, and one in Rickett's garden was not only covered with it, but had a strip over a foot long hanging from the bottom of the fabric, which was thereby rendered very conspicuous. The eggs are laid in May. In colour they are a beautiful blush-pink, spotted with very dark crimson over lavender-grey underlying spots. The surface-spots are often somewhat blurred in outline, as if the colour had "run."

The eggs of the Indian bird, as described by Stuart Baker ('Ibis,' 1896, p. 332), seem to differ from those of the Chinese bird. In the latter the full clutch consists of four eggs, which are ovate, with a tendency to become oval.

Twelve specimens average $1.12 \times .82$ in.

Although a shy bird, this Oriole frequents gardens and often builds close to houses, its clear loud notes and bright plumage readily attracting attention.

STURNIA SINENSIS (Gm.).

Also a summer-visitor, and breeding in the native city. We have never, however, obtained its eggs. Some collected by La Touche at Swatow (where, as well as in Hongkong, it nests in foreign-built houses) were very pale blue in colour.

GRACULIPICA NIGRICOLLIS (Payk.).

An extremely common resident on the plains.

The nest is a large domed structure of irregular shape, composed of dry grass, straw, leaves, twigs, and in fact

any materials that come handy, even such as string, paper, hair, and rags. It is very conspicuously placed in some pine or tall tree at a good height from the ground.

The eggs are laid in April, and number from four to six in a clutch. They are greenish blue, with a considerable amount of gloss. In shape they vary from narrowly ovate to oval. Thirty-nine specimens average $1.25 \times .91$ in. There are two, or perhaps three, broods in a season.

These birds' antics at pairing-time are most absurd to watch. One sidles up to its mate uttering its everlasting "tee-a-chee" with widely open bill, the other sits with puffed-out plumage, its bill buried in the breast-feathers; then follows a sham squabble, consisting of much snapping of beaks and playful peckings, after which they fly off to another tree and repeat the performance. Young birds when following their parents constantly utter a harsh "tcherk."

ACRIDOTHERES CRISTATELLUS (Linn.): Ibis, 1898, p. 369.

This common resident breeds in holes in trees and walls, as well as under the eaves of houses. The nest is a regular rubbish-heap of dry grass, straw, leaves, feathers, &c. The wing- and tail-feathers of Pigeons, Kites, Crows, and Magpies are largely used. In every nest examined by Rickett there was a snake's slough or part of one, and our men were once told by a native that *every* Mynah's nest was thus provided.

The eggs are pale greenish blue. These birds are very noisy and pugnacious in spring.

TERPSIPHONE INCI (Gould).

A summer-visitor to the plains and low hills about Foochow. It breeds in May, placing its nest on a horizontal branch or in the fork of an upright from six to about fifteen feet from the ground.

The structure is a beautifully firm and compact little cup, from 3 to 4 inches in external diameter, 2 to $2\frac{1}{2}$ inches in internal diameter; the outer depth is from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches, the depth of cup from $1\frac{1}{4}$ to $1\frac{3}{4}$ inches. The materials used

are fine dry grass, dead leaves, roots, and moss bound together with cobwebs, and plentifully spangled on the outside with spiders' egg-cases, lichens, cocoon-silk, bright-coloured moss, and sometimes small scraps of white paper. The lining materials are pine-needles, fine grass, roots, human hair, coir, and seeding grass-spikes.

The eggs are three or four in a clutch. They are more or less broadly ovate in shape, and average (eleven specimens) $.77 \times .59$ in. The ground-colour is light orange, speckled with burnt-sienna, over underlying lilac-grey specks. The markings are thickest at the larger end, where they form a cap or broad zone, the rest of the shell being very lightly marked, often with only a few scattered specks.

In one instance La Touche found a male (in red plumage) sitting on three eggs, his long tail-feathers floating in the breeze!

MICROCICHLA SCOULERI (Vigors) : *Ibis*, 1899, p. 195.

A resident species in all suitable localities, but it does not appear to be common. We have not taken the eggs near Foochow, and so have nothing to add to what La Touche has already said on the subject.

HENICURUS SINENSIS Gould : *Ibis*, 1899, p. 193.

A very common resident in all suitable localities.

A nest taken by our collectors in Central Fohkien on May 10th was a mere hollowed pad of dead and skeleton leaves, dry grass, and roots, with a few bamboo-leaves.

HENICURUS SCHISTACEUS Hodgson : *Ibis*, 1899, p. 194.

This species is far less common than the last.

A nest with two eggs taken in Central Fohkien on May 6th was composed of moss and roots, lined with fine dry grass, roots, skeleton leaves, and one feather. It was a neat firm cup.

RHYACORNIS FULIGINOSA (Vigors) : *Ibis*, 1899, p. 202.

A common resident on the plains as well as on the mountains of the Province wherever there are suitable streams.

We have nothing to add to what La Touche has already written on the breeding of this species in the mountains, except to note that the nests vary a good deal in construction. Some are neat firm cups, others loosely and untidily built; some, again, are mere pads, whilst others are a massive collection of materials with only a slight hollow for the eggs.

COPSYCHUS SAULARIS (Linn.).

A very common resident on the plains. It seems to prefer the neighbourhood of human habitations. About Ching Fung Ling we rarely met with it, but when we did, we invariably found some dwelling near at hand, though sometimes merely a lonely farmhouse hidden among the scrub on a hill-side.

Breeding commences in April, and two, or perhaps three, broods are reared in the season. The nest is placed in a hole in a tree or wall or on the ground under a stone or stump. Rickett took one that had been built in a rolled-up sun-blind in a verandah. The materials used are fine twigs, dry grass, moss, roots, hair, pine-needles, and occasionally a feather or two. These are put together in a loose untidy manner, and often form a mere pad.

The eggs are pale blue, thickly speckled, spotted, and blotched with reddish brown and violet, the latter forming sometimes surface, as well as underlying, markings.

Twenty-eight eggs average $\cdot 87 \times \cdot 68$ in. There are five in a full clutch.

MERULA MANDARINA (Bp.).

A very common resident on the plains, frequenting gardens and copses, and, like the Magpie-Robin (*Copsychus saularis*), always to be found in the vicinity of human dwellings.

The nest is placed high up in some tall pine or other big tree. It is built on one of the large boughs in a fork near the extremity of a branch, or in the angle formed by one branch with another or with the trunk.

The materials used are fine twigs, straw, dry grass, moss, roots, dead leaves, and a variety of odds and ends, such as

human hair, paper, &c. These are all plastered together with mud in varying quantities, and lined with fine dry grass, roots, and sometimes pine-needles. The amount of mud used is often very considerable.

According to Rickett's observations, the female is the sole architect, the male sitting on a branch near the nest singing, and attacking any birds that approach, especially Crows and Magpies, while he does not hesitate to swoop down at a prowling cat. The young in the nest appear to be fed chiefly by the female, but as soon as they leave the nursery the male takes his share in caring for them. Nesting begins in April, and two broods are reared.

The eggs are four or five in number, and, as a rule, ovate, but vary a good deal in shape as well as in colour. Forty-one eggs average $1.18 \times .87$ in. They are blotched, spotted, or speckled with various shades of red over underlying violet spots. The markings often form a cap, usually at the larger end, but sometimes at the apex.

The ground-colour varies from pale greenish to bluish green, while occasionally it is of a reddish tint.

UROLONCHA ACUTICAUDA (Hodgs.).

A very common resident, apparently confined to the plains and low hills. It appears to breed during most months of the year, as Rickett has notes of eggs and young, or of old birds carrying nest-materials, in nearly all the months between February and November inclusive.

The large globular nest of dry grass and bamboo-leaves is placed in a bush or small tree. The grass-stems project round the entrance and form at times a short neck.

Six eggs of a clutch taken on October 27th average $.60 \times .45$ in.

MUNIA TOPELA (Swinhoe).

Also a common resident on the plains. We have, however, no authentic eggs.

Rickett's coolie once found a nest which with mistaken zeal he took, instead of calling his master's attention to it, as he had instructions to do. He was told to return it to

the place where he found it, which was a low thick bush in which Rickett saw one of these birds hopping restlessly about. The nest was replaced, but when visited a few days later was found to have been deserted. It was a deep open cup, composed of seeding spikes of "sword-grass," and contained one *Munia*-like egg. La Touche when at Tamsui had similar nests brought to him, but was unable to identify them with certainty.

CHLORIS SINICA (Linn.).

A common resident in the plains. Breeding begins in April, when several nests are often to be found in the same grove. They are usually placed in a pine-tree near the extremity of a branch; we, however, obtained one in a fruit-tree, built in the angle formed by a branch with the trunk, and another in Rickett's garden was placed in a similar position in a *Grevillia* (*Grevillia robusta*).

The nest is always well concealed and is a beautiful compact little cup with very thick sides. It is composed of fine twigs, moss, dry grass, pine-needles, roots, fibres, vegetable down, and feathers, lined with very fine dry grass, roots, hair, or feathers. One brought to Rickett was lined with the short curly chestnut and black tail-feathers of a domestic cock. These curved over the egg-cavity, and at first glance gave the nest the appearance of a domed structure. The measurements are:—external diameter about 4 inches, internal diameter $2\frac{1}{4}$, outer depth $2\frac{1}{2}$, depth of cup $1\frac{1}{2}$.

The eggs are from two to four in a clutch. In shape they are more or less ovate. The ground-colour when fresh is a light opalescent green, with a few specks or comma-like markings of black and red of various shades. There are occasionally some pale reddish grey underlying marks.

Seven eggs in Rickett's collection average $\cdot73 \times \cdot54$ in. Two in La Touche's are much larger, viz. $\cdot77 \times \cdot56$ and $\cdot82 \times \cdot52$.

PASSER MONTANUS (Linn.).

This is our common "House-Sparrow." It builds in any

situation to which it can convey unlimited quantities of straw, grass, feathers, and rubbish of all sorts.

We once found two Sparrows' nests built into the base of that of a Kite (*Milvus melanotis*). One contained three young and the other five eggs. There was a young Kite in the nest above. The eggs need no description and are, as is usually the case, very variable in colour. Two extremely abnormal specimens in La Touche's collection are rough rhomboids in shape! They are white, one having some indistinct pale marks at the end.

PASSER RUTILANS Temm. : Ibis, 1900, p. 35.

This species breeds about Foochow. It nests in holes in trees away from human dwellings, and is shy and wary.

An egg in Rickett's collection taken near Foochow measured $.74 \times .52$ in.

EMBERIZA CIOIDES Braudt : Ibis, 1900, p. 35.

This common resident breeds on the low hills about Foochow.

The nest, composed of fine twigs, dead leaves, dry grass, and fern-fronds, lined with fine dry grass, roots, fibres, and hair, is usually placed in a small pine-tree, not far from the ground. Rickett saw a pair carrying materials on June 15th, and shot a young bird able to fly well on May 24th, so no doubt there are two broods in a season.

Some nests are firm compact cups, others very loosely and untidily constructed. La Touche has already described the eggs.

Rickett notes that the song resembles that of the Yellow-Hammer without the long final note.

MELOPHUS MELANICTERUS (Gm.) : Ibis, 1900, p. 38.

This bird also builds on the low hills about Foochow, but we have no eggs from the district.

A male was seen carrying nest-materials on May 16th.

COTILE RIPARIA (Linn.).

A winter visitor, appearing about October or November and leaving in April or early in May.

Our collectors found a colony breeding in a sand-bank up the Yuen Fu River in February. The five or six nests which were dug out were loose shallow saucers of dry grass, bamboo-leaves, and feathers. They were about 5 inches in diameter and an inch in depth.

The thirteen eggs averaged $\cdot 70 \times \cdot 50$ in.

HIRUNDO GUTTURALIS Scop.

Arrives about March and leaves again about the end of August ; but single birds, small parties, and even considerable flocks may be seen passing over during any month in the winter.

This species breeds on the plains, but invariably selects native houses and temples to nest in, and as the natives consider that the birds' presence brings luck, and will on no account suffer them to be interfered with, we have never been able to obtain the eggs.

Young birds are to be seen in the second or third week of May.

MOTACILLA LEUCOPSIS Gould : Ibis, 1899, p. 412.

A common resident, breeding on the hills and mountains and frequenting the plains in winter. We have nothing to add to what La Touche has already written about it.

Eighteen eggs average $\cdot 76 \times \cdot 59$ in. : the largest $\cdot 84 \times \cdot 61$, the smallest $\cdot 74 \times \cdot 59$.

ANTHUS RICHARDI Vieill.

The small race (*A. infuscatus* Blyth, *cf.* Cat. B. Brit. Mus. vol. x. p. 567 ; Ibis, 1896, p. 494) arrives in April and leaves in October, and breeds on the low hills round Foochow. The larger race arrives in October and leaves in April, so that individuals of the two races may be seen together.

On October 8th Rickett obtained two of each race, which measured in the flesh as follows :—

♀.	Length	6·80 ;	wing	3·40 ;	tarsus	1·20 inches.
♂.	„	6·90 ;	„	3·50 ;	„	1·20 „
♂.	„	7·60 ;	„	3·70 ;	„	1·20 „
♂.	„	7·55 ;	„	3·70 ;	„	1·20 „

His series of some seventy or eighty skins (which are now in the British Museum), shot in all months of the year, shew a regular gradation from the largest to the smallest. The average measurements of these is as follows:—Wing 3·54 in., tarsus 1·18, bill from gape ·80, hind claw ·56. Thirty-six specimens average in length 6·92 inches.

The call-note of the two races is identical and very different from that of any other Pipit that visits Foochow. The song (if it can be called so), as noted by Rickett, is merely a repetition of notes sounding like “*chi, chi, chee, chee, chee,*” the last three in a rapidly descending scale. It is uttered on the ground, from the top of a bush or small tree, or when the bird is soaring in the air somewhat after the manner of a Skylark.

We have taken very few nests of this bird, common as it is. This is due to the cunningness with which they are concealed and to the wariness of the old birds. One of the pair (? ♂) is always on the watch, and on the approach of an intruder takes wing, uttering its loud clear double call-note; the sitting bird (which has run some way through the grass) shortly afterwards joins its mate, and the two fly round in the air or settle on some bush or Chinese grave till the danger is past.

The first nest was found by accident. A momentary glimpse of a bird with food in its mouth, dropping behind a ridge, led to the discovery of a nest with four hard-set eggs. The sitting bird fluttered along the ground, feigning a broken wing.

The nest, which is a loose cup of dry grass with sometimes a few fine twigs or a little moss, and lined with fine dry grass, roots, and hair, is placed in a hollow under a thick tuft of grass or herbage.

The eggs, four or five in number, are laid in April and May. They are ovate in shape and average $\cdot 80 \times \cdot 61$ in.

The ground-colour is dull light greenish white, spotted, speckled, and streaked longitudinally with sepia-brown and dark and light purple, over underlying violet-grey blotches, spots, and streaks.

ALAUDA CÆLIVOX Swinhoe : Ibis, 1892, p. 428.

La Touche notes that this bird "breeds on grassy hills near Foochow and at the mouth of the Min River. Full-fledged young are to be seen in May." We have never obtained the eggs.

ÆTHOPYGA LATOUCHII Slater : Ibis, 1891, p. 43, pl. i.

This Sun-bird is common in winter in Central Fokhien, and has been shot about fifty miles from Foochow. It no doubt breeds in the Province, but we have no examples of its eggs.

GECCINUS GUERINI (Malh.) : Ibis, 1900, p. 42.

A common resident in wooded districts.

Two eggs taken in Central Fokhien on May 16th measure 1.14 × .85 in., 1.21 × .86.

PICUMNUS CHINENSIS (Hargitt).

GECCINUS CITRINO-CRISTATUS Rickett.

CHRYSOPHLEGMA RICKETTI Styan.

GECCINULUS VIRIDANUS Slater.

DENDROCOPUS CABANISI (Malh.).

TYNGIPICUS SCINTILLICEPS Swinhoe.

MICROPTERNUS FOKIENSIS Swinhoe.

LEPOCESTES SINENSIS Rickett.

We have not obtained eggs of any of these eight species. Of *Lepocestes sinensis* we have skins of young birds.

MEGALÆMA VIRENS Bodd. : Ibis, 1900, p. 46.

A common resident on the hills and mountains of the Province, where it breeds.

Natives all agree in saying that it nests late in the season. Our collectors state that the birds had not commenced breeding in Central Fokhien when they left in the middle of May.

EURYSTOMUS CALONYX Sharpe : Ibis, 1887, p. 229 ; 1900, pp. 44, 57.

Common as a summer-visitor, arriving in April and leaving again in September.

As we have already stated, the deserted nests of Magpies

are invariably made use of around Foochow, notwithstanding the fact that trees with convenient nest-holes are abundant. In the mountains, where Magpies are scarce, our collectors state that the Rollers' eggs are laid in holes in trees.

When prospecting for suitable quarters the birds are very noisy and aggressive, but as soon as laying commences they become very quiet, and fly away quickly and silently when the tree is approached.

The eggs, of which there are four to the clutch, are not laid till late in May, as La Touche says: "probably because the Magpies' nests are not available until early in that month." There seem to be two types of eggs:—

(a) Larger—intensely glossy china-white and sparsely pitted.

(b) Smaller—less glossy and closely pitted.

Occasionally eggs of type (a) are speckled with grey, some of them conspicuously so. These markings are sometimes on the surface, at other times within the shell. They may, of course, be, as La Touche says, "a peculiar form of nest-stains," but are difficult to remove and appear like genuine marks.

Twenty-seven eggs average 1.40×1.13 in.: the largest 1.50×1.14 , the smallest 1.31×1.07 .

CERYLE RUDIS (Linn.).

A very common resident.

We have never taken its eggs, but La Touche once kept some young which were very wild and untamable.

He shot a specimen in March in which the *ova* were largely developed.

CERYLE GUTTATA Vigors.

Resident, but much less common than the last.

We have no notes as to its nidification.

HALCYON SMYRNENSIS (Linn.).

Common and resident.

We have no specimens of its eggs. La Touche reared two or three young birds at Amoy. They fed readily on raw beef and crabs and became very tame.

HALCYON PILEATA (Bodd.) : Ibis, 1900, p. 44.

An egg taken by our collectors in Central Fohkien on May 16th measured 1.22×1.06 in.

ALCEDO BENGALENSIS Gm. : Ibis, 1892, p. 479.

A very common resident.

We took seven incubated eggs from a hole in a bank by some rice-fields on June 19th, and had two fresh specimens brought to us on July 9th. These nine eggs averaged $.78 \times .69$ in. in dimensions, and were intensely glossy in appearance.

The nest-hole is by no means always near water. One pair reared a brood in some ornamental rockwork in a garden; another nested in a hole in a bank facing a lawn-tennis court; while a third frequented a hole in a creeper-covered wall in Rickett's garden, and would in all probability have bred there, had not an attempt on the part of a gardener to catch one of the birds in the hole frightened them away.

In spring these Kingfishers are very noisy and active, chasing each other about at lightning speed even among the houses or through the trees in the gardens, and uttering a shrill "*che-et, che-et.*"

UPUVA EPOPS LINN.

A scarce winter-visitor to Foochow, but breeds in the vicinity of Amoy. One of Rickett's collectors saw an individual carrying food at a place close to Amoy early in June, but failed to trace it to its nest.

CYPSELUS PACIFICUS Latham.

Occurs about Foochow occasionally, generally in damp or rainy weather in April, May, June, or September, but never makes any stay.

Our collectors state that it breeds on the coast.

CYPSELUS SUBFURCATUS Blyth : Ibis, 1903, p. 217.

CAPRIMULGUS JOTAKA T. & S. : Ibis, 1900, p. 41.

Breeds on the plains and in Central Fohkien.

Rickett shot a young bird near the settlement (Foochow), with some down still adhering to the plumage, on August 18th. A female shot by him in the Yuen Fu Valley in May contained

ova no larger than No. 5 shot, so that it is apparently a late breeder. La Touche has a young bird procured up the Yuen Fu on August 28th.

Two eggs, said to belong to this species, were brought to us by our men from Central Fohkien, but are very different from those described by La Touche from Kuatun. They are blotched, not marbled like the Kuatun eggs. The markings are much more numerous and darker, being darkish brown and drab-grey over underlying marks of bluish grey. They measure $1.22 \times .90$ and $1.10 \times .86$ in.

HARPACTES YAMAKANENSIS Rickett.

No doubt this bird breeds in the Province, but we have no examples of its eggs. It is not uncommon in Central Fohkien in winter. Our collectors did not meet with it when in that district in April and May.

CUCULUS CANORUS Linn.

CUCULUS INTERMEDIUS Vahl: La Touche, *Ibis*, 1900, p. 45.

Not uncommon, especially the latter, about Foochow in spring. We have, however, no eggs of either species*.

CACOMANTIS MERULINUS Scop.

A summer-visitor to Amoy, but has only once occurred to our knowledge at Foochow ('*Ibis*,' 1903, p. 217).

COCCYSTES COROMANDUS (Linn.): *Ibis*, 1900, p. 46.

Our collector came across quite a number of individuals in Central Fohkien in May.

EUDYNAMIS HONORATA Blyth.

During La Touche's first stay at Foochow (1883-87) the Koel was not noticed; it is now a regular summer-visitor. Rickett's first specimen was obtained in 1893.

A female shot on August 5th had one *ovum* more than half an inch in diameter and another about one-third of an inch.

* We have on three or four occasions obtained eggs that were no doubt those of one of these Cuckoos in nests taken by our men, but it has been impossible to identify them.

An egg in Rickett's collection, answering to the description of that of this species, was taken from the nest of *Graculipica nigricollis* about the end of May. It measures $1.28 \times .95$ in.

CENTROPUS SINENSIS Steph. : Ibis, 1892, p. 480.

A common resident on the plains and low hills.

We have a nest taken on June 21st. It was a bulky mass of "sword-grass." The two eggs it contained were blunt ovals in shape and measured 1.51×1.16 and 1.47×1.20 in. They were cream-coloured, with shells of a chalky texture.

BUBO IGNAVUS Forst.

Breeds in the vicinity of Foochow.

Two young birds were given to La Touche by a Dominican missionary stationed at Haitan Island, and Rickett has known of several young birds (some in the downy stage) offered for sale in Foochow.

SCOPS GLABRIPES Swinhoe : Rickett, Ibis, 1900, p. 57.

The eggs referred to in the above-cited paper were taken on May 21st. They were of a rather deep creamy tint, somewhat closely pitted, and measured 1.40×1.24 and 1.42×1.27 in.

Rickett's collector shot a female on March 28th which contained three well-developed *ova*—the largest, he said, of the size of the top of his thumb. He described the oviduct as much enlarged and flaccid.

Young birds are easily reared on raw meat and become very tame.

SCOPS STICTONOTUS Sharpe.

SCOPS LATOUCHII Rickett.

These two Owls are, no doubt, resident in the wooded hills and mountains, but we know nothing of their nidification.

GLAUCIDIUM WHITELYI (Blyth).

We have only one egg of this very common resident species. It was taken from a hole high up in the trunk of a tall pine, and measures 1.38×1.24 in.

GLAUCIDIUM BRODIEI (Burton).

Resident, and not uncommon in the hills and mountains of the Province. We have, however, no examples of its eggs.

NINOX SCUTULATA (Raffles).

A young bird shot in the Yuen Fu Valley in July proves that this species breeds at the lower levels. La Touche does not appear to have met with it in the mountains, and Rickett had only one specimen from Kuatun, which was shot in November.

PANDION HALIAËTUS (Linn.).

A fairly common winter-visitor. La Touche ('Ibis,' 1887, p. 231) says, "some remain throughout the summer."

NISAËTUS FASCIATUS (Vieill.).

Resident and not uncommon. It breeds in the hills not far from Foochow and winters on the plains. Two young birds obtained by La Touche on May 22nd were successfully reared. When taken, they differed greatly in size: the smaller had the head almost covered with white down, was darker in colour, and had paler-coloured legs; the larger was lighter in colour, with yellowish or buffy-white edgings to the head-feathers, and very little down adhering thereto. The irides in both were dark brown.

SPIZAËTUS NIPALENSIS (Hodgson).

Resident and not uncommon in Central Fohkien. It probably also frequents the mountains, but La Touche was unable to identify it at Kuatun, except on one occasion ('Ibis,' 1900, p. 47).

Rickett's collectors took a young bird at Ah Ch'ung in May. It was covered with white down, through which the quills of the feathers were protruding.

The finders described the nest as a huge structure of sticks, big enough for a man to curl himself up in!

SPILORNIS CHEELA (Lath.) : Ibis, 1900, p. 57.

Fairly common and resident in Central Fohkien.

The crop of one example contained a small snake and a large Mantis.

Rickett had a close view of an individual at Ching Fung Ling on one occasion. It swooped down at a small white terrier that was following him, as he was walking in a thick patch of forest. The bird presented a splendid spectacle as it checked its swoop and remained for a moment almost motionless in the air, its barred wings and tail outspread to their utmost, its bushy crest erect, and its yellow eyes glaring down on the cowering dog. It then swerved to one side, and dashed away through the trees at great speed.

MILVUS MELANOTIS T. & S.

An extremely common resident on the plains, less so in Central Fohkien, and not met with in the mountains. There seems to be a partial migration in summer, as but few are seen about Foochow after the breeding-season until September, when their numbers are again greatly increased. Styan has noted a similar movement as occurring in the lower Yangtze basin ('Ibis,' 1891, p. 490).

This Kite is an early breeder, most eggs being laid by the middle of February; but fresh clutches may be taken in March, or perhaps a little later.

The nest is placed high up in a tall tree, usually a pine, and is a large and conspicuous structure. It is composed of sticks, lined with dry grass and all sorts of rubbish, such as paper, human hair, rags, and bits of matting.

The eggs are usually two in number, but clutches of three are not at all uncommon, and sometimes only a single egg is laid.

Fifty-four eggs average 2.25×1.78 in. : the largest of these was 2.48×1.82 , the smallest 2.11×1.76 . An abnormally small egg (not included in the above) was 1.99×1.58 in. In shape they are somewhat variable, but a broad short ovate or nearly oval form is the most usual.

In colouring they are most variable, and it is rare to find specimens in the same clutch alike. The ground-colour is dirty or greenish white, blotched, spotted, speckled, smeared, or scrawled with bright brick-red, vandyke, or other shades of brown, and sometimes violet. Rickett had a single

egg which was dirty white, with only two or three small stains of pale rust-colour. In some cases the markings are very numerous and rich.

The behaviour of the parents is very uncertain. In one instance both old birds had to be shot before it was safe to send a boy up the tree to the nest, which was found to be empty! In another the old bird slipped off the nest containing two downy nestlings and flew away out of sight. At times one parent will attempt to defend the nest, while the other soars about at a distance squealing plaintively.

A newly hatched bird (covered with hairy down) had the bill dusky blue; the iris dark brown; the cere, gape, and eyelids pale grey; the region round the eye and the ear blackish. Lores, forehead, hind-neck, and under parts greyish white; the rest of head silvery grey; the upper part of the body and the wings brownish grey.

The nest-larder contained a "squab" Dove (*Turtur chinensis*).

FALCO SUBBUTEO Linn.

A common summer-visitor to the plains, arriving in April and leaving in October.

It breeds in the deserted nests of Crows and Kites. No eggs are laid much before the end of May, and we have taken incubated specimens as late as July.

The eggs are white, so closely speckled or stippled all over with pale red as to hide the ground-colour; over this stippling there are at times blotches of darker red or a cap of the same, covering one end or the other of the egg. When newly laid they have a beautiful "bloom," which is lost as incubation proceeds. La Touche has an egg, taken from the oviduct of a female, which is pure white with a few "shell-marks" of violet-grey.

Fifteen eggs average 1.58×1.25 in. : the largest 1.70×1.28 , the smallest 1.50×1.17 .

The parents attack any large birds, such as Crows and Kites, especially the latter, that pass near the nest-tree. They seem to have a great dislike to Kites, and persecute

them even after the nesting-season is over. Rickett once saw a male Hobby strike a Kite (*Milvus melanotis*) fair on the back, knocking out a small cloud of feathers !

TINNUNCULUS SATURATUS Blyth : Ibis, 1900, p. 48.

This is apparently a resident race which descends to the plains in winter, at which season we are also visited by *T. alaudarius*.

MICROHIERAX MELANOLEUCUS Blyth : Ibis, 1894, p. 223.

A large series of specimens, obtained since Rickett wrote in the 'Ibis' as quoted above, has confirmed the conclusions then arrived at.

The species is a common resident in Central Fohkien, occasionally straying down to the plains.

An egg, taken from a hole in a tree, was of a blunt oval shape : it measured $1.18 \times .92$ in., and was buff-coloured ; the stain, however, readily washed off, shewing the dull white shell beneath. This egg had evidently been laid some time, and was lying on a few butterfly-wings, under which was an old nest of leaves and feathers.

A pair of Falconets were seen about the place and were shot by our collectors, who took from the oviduct of the female a fully formed egg (unfortunately broken), which was white with a few buff marks.

In July our men brought us (alive) a pair of old birds and a fully fledged young female which they had caught in a hole in a tree. There were other birds in the hole, but they escaped.

The male died in about a fortnight, but La Touche kept the two females for fourteen months, during which time he made the following notes on their habits :—

The young bird for some months preferred food taken away from the old one to that provided for itself. It would scream violently, and attempt to snatch away a half-plucked Sparrow from its parent, which would endeavour to protect her property by folding her wings over it, but after a short tussle the young bird always obtained possession of the prey.

They spent most of the day and all the night in a box in

their cage. To this box they would retire directly after a meal, and there lie down. Before the box was put into the cage they used to lie on the bottom after a meal, as well as at night, at which time they were very hard to rouse. If an attempt was made to touch them with the hand they would sidle away uttering a low hissing sound. When in the box the young bird would strike fiercely with its talons if any attempt was made to touch it. These birds had a strong and very unpleasant "garlicky" smell.

They were sent home to the Zoological Society's Gardens, where they soon died. An illustration of them appeared in the 'Field' (xci. p. 141, 1898).

TURTUR RUPICOLA (Pall.).

A common resident. La Touche notes it as "fairly common at Kuatun."

We have, however, only one clutch of eggs, dated "beginning of May." They measure $1.36 \times .1$ and 1.30×1.10 in. : one is oval, the other oval pointed at one end. They have but little gloss.

TURTUR CHINENSIS (Scop.).

A very common resident.

The nest is the usual flimsy structure of sticks, placed in a tree, high bush, or thick creeper. The eggs are elliptic oval in shape, with (sometimes) one end more pointed than the other.

Seventeen eggs average $1.14 \times .87$ in. : the largest $1.20 \times .89$, the smallest $1.08 \times .85$.

TURTUR HUMILIS (Temm.).

Common in summer on the plains. A few individuals winter about Foochow. They nest in trees and lay pale cream-coloured eggs.

A wounded bird brought to La Touche laid an egg on the following day that was of a much deeper colour than usual.

PHASIANUS TORQUATUS Gm.

Considering that these birds are shot and trapped by the natives at all seasons, and that vermin, furred and feathered, abound, it is wonderful that Pheasants are as numerous as

they are on the lower wooded hills of the Province. In the mountains they are less common, as La Touche writes that they "occur sparingly on the grass-lands near Kuatun."

We have no specimens of the eggs, for the birds are scarce enough about Foochow without our encouraging the robbing of their nests.

PHASIANUS ELLIOTI Swinhoe.

Apparently not an abundant species in the Province (*vide* 'Ibis,' 1900, pp. 49 & 59).

A broken egg said to be that of Elliot's Pheasant was obtained at Kuatun. It is of a rather long and pointed ovate shape, and measures 1.85×1.29 in. In colour it is very pale greenish buff.

PUCRASIA DARWINI Swinhoe.

Common in the mountains, whence a doubtful egg, said by the natives to be that of this species, was brought by Rickett's collectors; it was in a very damaged condition, and measured about 1.96×1.48 in.

GENNÆUS NYCTHEMERUS (Linn.).

Very common on the hills and mountains of Central and North-West Fohkien.

A clutch of four eggs (two much damaged) from Central Fohkien were said to be those of the Silver Pheasant. One of these eggs measured 1.88×1.46 in., another 1.64×1.22 . The two that were broken apparently matched the larger egg in size.

CERIORNIS CABOTI (Gould): bis, 1900, p. 49.

This species probably occurs on the thickly wooded hills of Central Fohkien, as both Rickett and his collectors have caught glimpses of what they believe to be Tragopans, and the natives describe a bird that can only be of this species.

BAMBUSICOLA THORACICA (Temm.).

Common throughout the Province in suitable localities.

La Touche has two eggs from Kuatun which measure 1.39×1.07 and 1.40×1.05 in. Six eggs from Central Fohkien average 1.34×1.06 .

COTURNIX JAPONICA Cassin.

Rickett's collector shot a Quail one spring near Foochow, and took from the oviduct an egg which measured $1.05 \times .85$ in. The shell was somewhat rough and pure white. The bird was not preserved, but was probably of this species.

ARBORICOLA RICKETTI Grant.

We have not yet taken the eggs of this common species in Central Fokkien.

FRANCOLINUS CHINENSIS (Briss.).

Common on the low wooded hills around Foochow.

We have made no attempt to obtain the eggs, for the same reason that we do not wish to encourage the taking of Pheasants' eggs.

TURNIX BLANFORDI Blyth.

This is no doubt a resident, but its skulking habits render it hard to observe, and therefore, as Styan says, it seems much scarcer than it really is.

AMAURORNIS FUSCUS (Linn.): Ibis, 1892, p. 494 (*Porzana erythrothorax*).

Five eggs average $1.19 \times .90$ in. On Sept. 13th Rickett had two newly hatched young brought to him. They resembled those described in the 'Ibis' as cited above. La Touche has a clutch of ten eggs which he doubtfully refers to this species. They are cream-coloured, with fine specks and small spots of burnt-sienna over violet underlying specks. They vary in shape from ovate to oval, with more or less pointed ends.

They average $1.27 \times .93$ in.: the largest $1.30 \times .96$, the smallest $1.21 \times .90$.

AMAURORNIS PHENICURUS (Forst.).

Common in the rice-fields and swampy spots about Foochow in summer, and occasionally to be met with in winter.

We have obtained eggs in the end of April and all through May. They are of a more or less deep tint of cream-colour, spotted and speckled with burnt-sienna and violet over under-

lying violet marks. The ground-colour often has a pinkish tinge. The spots, which are generally large and elongated, are frequently thickest at the larger end, where they form a small cap.

Twenty-four eggs average 1.61×1.19 in.: the largest 1.76×1.20 , the smallest 1.49×1.16 .

An egg taken from the oviduct of a bird shot on May 11th was much elongated. It was white, and had a few spots of light red on the larger end, with underlying purple spots.

AMAUORNIS AKOOL (Sykes).

This bird appears to be common in Central Fohkien. The natives say that it breeds in July.

GALLICREX CINEREA (Gm.).

A common summer-visitor about Foochow. We have, however, very few specimens of its eggs.

On August 23rd, La Touche found a nest of this bird in a field of "river-rice." It was a shallow pad of dry rice-blades, those on the outside being twisted into the stalks of the herbage that supported the nest, which was about two feet from the ground. It contained three incubated eggs.

The eggs of this species are greenish cream-coloured or deep creamy buff washed with reddish. Those of the former colour are very glossy in texture, those of the latter much less so. The surface-markings are of a rather pale yellowish red, and in some specimens are small, being much broken up into irregular spots and specks, while in others they form large elongated blotches which are thickly scattered over the whole shell. The underlying spots are pale purple, and are conspicuous in the glossy type.

Six eggs average 1.63×1.21 in.

HYDROPHASIANUS CHIRURGUS (Scop.).

This bird is said by the natives to breed near Foochow, but we have never obtained the eggs.

ÆGIALITIS DEALBATA Swinhoe: Ibis, 1892, p. 497.

Three small Plovers' eggs were given to La Touche at Amoy by a Chinese friend. On going to the place where

they had been found (a sandy sea-shore), a pair of what La Touche took to be these birds was seen.

These eggs of are a rather deep yellow-buff with small round spots and twisted lines of very deep blackish brown over underlying spots and short streaks of blue-grey. They measure $1.25 \times .91$ – $1.27 \times .93$ and $1.31 \times .90$ in. This species is resident on the south coast of China.

ÆGIALITIS PLACIDA (Gray).

Apparently resident in the Province, as we have young birds shot in July in the Yuen Fu Valley and have obtained adults in winter.

CHETTUSIA CINEREA (Blyth).

Our collectors shot a female in May near Yen Ping Fu (which is about 140 miles up the Min River from Foochow) with enormously developed ovaries; it was apparently about to breed.

TOTANUS HYPOLEUCUS (Linn.).

A common resident species, but we have never obtained its eggs.

RHYNCHÆA CAPENSIS (Linn.).

Also a common resident. Rickett's collector found a nest with four eggs on a narrow "bund" between two rice-fields. It was a mere hollow in the ground lined with dry grass.

La Touche has an egg taken from the oviduct of a bird shot on June 20th. It measures 1.40×1 in. and is ovate in shape. It is of a clear yellow-buff, thickly blotched and spotted with very dark brown, and with a few lines of the same colour, over light brown blotches and spots. There are a very few underlying spots of grey.

On August 31st a native brought to Rickett a bird of this species, from the oviduct of which he had extracted an egg. It was elongated ovate in shape and measured $1.48 \times .99$ in. The markings were very small.

This egg by some mischance got mixed up with some eggs presented by Rickett to the British Museum and *someone* has written on it "*Æ. geoffroyi*."

It is, however, undoubtedly the egg of the Painted Snipe, and the eggs collected by Swinhoe in Formosa are, in Rickett's opinion, also those of *R. capensis* *.

? *LARUS CRASSIROSTRIS* Vieill.

A common resident on the coast. Two eggs taken by a fisherman in July were probably laid by this Gull. They are ovate and pyriform ovate in shape respectively, and measure 2.20×1.66 and 2.34×1.66 in. In colour they are greenish buff, with small spots and short lines of very dark brown over dark and light purplish-grey spots.

STERNA ANÆSTHETA Scop.

Several adults, together with young in down and eighteen eggs, were brought to us by our men in the first half of July from an island off the coast. The eggs were nearly all incubated.

The ground-colour is greenish white or light buff. The spots are not large and are fairly evenly distributed over the shell. They vary from dark burnt-sienna to madder- and dark vandyke-brown, with underlying spots of various shades of violet-grey.

These eggs were deposited under rocks or stones, and the birds allowed themselves to be caught on their nests.

Seventeen eggs averaged 1.81×1.27 in. Young in down were coloured as follows:—

- (a) (Very young) Drab-grey tinged with buff and mottled with dark brown. Bill blackish. Legs greyish black.
- (b) Dark grey tinged with buff, faintly mottled with dark brown. Throat and fore-neck dark grey. Under parts greyish white.
- (c) Same as the last, but lighter.

One young bird was of a very light grey colour.

* The egg figured in Cat. Eggs Brit. Mus. vol. ii. pl. i. fig. 9, as that of *Ochthodromus geoffroyi* is one of the eggs found by Rickett's collector as stated above.

STERNA DOUGALLI Montagu.

Our collectors brought a number of eggs (from the island mentioned above) which they said were probably those of the present species, as it appeared to be the commonest Tern on the island. A number of these eggs were hatched, but the chicks did not answer to the description of the young in down of the Roseate Tern as given in Yarrell (4th ed.) vol. iii. p. 548. It is therefore unnecessary to describe the eggs from which they were produced. In spite of all La Touche's care these young birds did not live long. It may, however, be of use to give a brief description of them.

There were three types, viz. :—

- (a) Upper parts mottled grey and black with a slight tinge of buff. Throat the same. Rest of under parts white. Bill deep pink, with black tip. Legs deep flesh-coloured.
- (b) Upper parts and throat black, mottled with buff. Under parts white. Bill dark dull red with black tip. Legs as in (a).
- (c) Upper parts and throat buff, mottled with black. Under parts white. Bill and legs as in (a).

Our men brought us several specimens of the adults, so that there is no doubt as to this species breeding on the coast.

STERNA MELANAUCHEN Temm.

From the same island we obtained an adult of this species and a young bird in down, which La Touche reared.

The description of this young bird, as we received it on July 16th, is as follows :—Upper parts greyish white, spotted with black; wings light buff, barred with black; under parts whitish. Bill dark reddish, tipped with black; legs very dark flesh-coloured. When released on Sept. 11th it agreed very well with the description of the young bird given in Cat. B. Brit. Mus. vol. xxv. p. 128. In our bird, however, the bill was blackish, as were also the legs.

BULWERIA BULWERI Bp.

Our collectors also brought us, from the same island, a dozen eggs of this species with the old birds caught in the

nest-burrows. These eggs were all much incubated. They were ovate in shape and averaged 1.70×1.24 in.

PSEUDOTANTALUS LEUCOCEPHALUS (Gm.).

This bird occurs near Foochow in summer, but we have no note as to its nidification.

ARDEA CINEREA Linn.

Rickett's collector obtained eleven eggs from a "heronry" near the mouth of the Min River. He said that there were fifty or sixty nests on a huge camphor-tree. They were between one and two feet in diameter, made of sticks, and lined with leaves. The eggs were taken on May 16th and averaged 2.25×1.60 in.

HERODIAS GARZETTA Linn.

Before the extermination of this bird to supply the demands of fashion, it was a common summer-visitor and a few remained during the winter.

The nests were built in colonies on large trees, and were composed of sticks lined with dry grass. The eggs were of a rather deep greenish blue. Twenty specimens averaged 1.79×1.30 in.

The following notes were made by us at a "heronry" that formerly existed near the bank of the river close to Foochow:—

The nests were placed on two large trees standing close together: a few had eggs (May 3rd), but most of them were in process of construction. It was a busy scene, with numbers of birds passing to and fro with sticks and tufts of grass in their bills or hurrying off for more material. One of each pair seemed to remain by the nest to guard it from robbery. A constant babel of sounds was maintained by guards and workers, varying from a comparatively low "wah, wah" to a loud harsh "wa-a-k, wa-a-ak, wa-a-ak" when a fight took place. At such times the birds assumed a fierce appearance, and looked very handsome with the dorsal plumes raised in a thick bushy tuft and the crest-feathers standing stiffly out.

HERODIAS EULOPHOTES Swinhoe: Rickett, Ibis, 1903, p. 220.

This species, though by no means so plentiful as the last,

used also to breed near Foochow in company with the commoner birds.

Rickett had three eggs taken from the oviducts of birds shot for their plumes. They resembled those of *H. garzetta*, and measured 1.70×1.30 , 1.74×1.36 , and 1.83×1.31 in.

Two of these eggs appear in Cat. Eggs Brit. Mus. vol. ii. p. 123, under the heading of *Demiegretta sacra* (Gm.), an identification with which Rickett does *not* agree (see 'Ibis,' l. s. c.).

HERODIAS INTERMEDIA Wagler.

A much rarer species than either of the foregoing. Rickett had skins procured in April and July, and La Touche ('Ibis,' 1892, p. 488) describes a bird shot at Foochow on May 7th; so that this species might possibly have bred there in bygone days.

BUBULCUS COROMANDUS (Bodd.).

A common summer-visitor.

La Touche has an egg taken from the oviduct of a female shot on May 5th. It is biconical in shape, and measures 1.93×1.35 in. Two other eggs in his collection are fusiform and oval respectively with rounded ends. They measure 2.07×1.29 and 1.80×1.38 in.

All these eggs are very pale bluish green, almost white.

ARDEOLA BACCHUS Bp.

A very common resident. It nests in colonies on trees, sometimes in company with *Herodias garzetta*.

On May 31st La Touche took four clutches of three and five eggs respectively, some being fresh and some incubated; several nests contained young birds. The eggs resemble those of *H. garzetta*.

Seventeen specimens average 1.56×1.17 in.: the largest 1.65×1.18 , the smallest 1.47×1.15 .

The nests also resemble those of *H. garzetta*; a few of them had leaves on the outside.

NYCTICORAX GRISEUS (Linn.).

Very common in summer. A few may be seen about in the winter months. The birds nest in colonies on large trees,

but the natives will not allow them to be disturbed, so we have not obtained the eggs.

ARDETTA SINENSIS (Gm.).

A common summer-visitor.

The only nest of which we have a note was taken by Rickett's collector. It was placed in a bamboo some twelve or fifteen feet from the ground. The materials used were twigs, straw, and bamboo-leaves in great quantity, on the top of which was a slight hollow for the eggs. The man, seeing a large deep-looking nest, bent the bamboo downward, with the result that the five or six eggs rolled out, and all but one were smashed. The specimen saved measured $1.24 \times .92$ in. The nest was 10 inches wide by 6 inches deep outside.

DUPETOR FLAVICOLLIS (Lath.).

A common summer-visitor, arriving about the end of April or beginning of May, and leaving in September.

The nest is built at various heights in trees, bushes, or bamboos. One from which Rickett took four eggs was built high up in a large tree standing in the middle of a public road, surrounded by houses and far from any water. Another was in a clump of bamboos near a house in a neighbour's garden. A pair of birds built in this clump every year. As the bamboos kept the breeze off the house it was decided to cut them down, and on July 14th the five downy nestlings were transferred to a wine-case filled with straw and placed in a neighbouring tree. The old birds reared the brood in their new quarters, feeding them morning and evening with small fishes.

The eggs of this species are very pale bluish green, almost white.

Forty specimens average 1.67×1.24 in.

NETTAPUS COROMANDELIANUS (Gm.).

On July 22nd Rickett's collector shot a pair of these birds near Foochow, and took from the oviduct of the female a perfect egg, which measured 1.69×1.28 in.

A specimen was obtained in Central Fohkien in May.

ÆX GALERICULATA (Linn.).

A common resident. We have not obtained its eggs.

ANAS ZONORHYNCHA Swinhoe.

Also a common resident. Rickett has the skins of two young in down. La Touche took nests and eggs at Swatow ('Ibis,' 1892, p. 491).

PODICIPES PHILIPPENSIS (Steph.).

A common resident. About the end of July Rickett's collector shot two young in down near Foochow. He said that there were three swimming about with the old bird in a large pond.

III.—*On the Birds of the Upper Muonio River.* By S. A.

DAVIES, M.B.O.U., Lieut. East Lancashire Regiment.

IN April, 1904, I made a three months' expedition to the upper waters of the River Muonio, which are locally known as the Kongämä, where I was joined three weeks later by Mr. John Stares.

The Muonio rises in 69° 10' N. lat. and enters the Gulf of Bothnia in 65° 50' N. lat., forming the boundary between Sweden and Finland, but we contented ourselves with working the Kongämä between 69° and 68° 30' N. lat., the latter being the northernmost limit of the pine-forests. I had previously visited the district in 1895, when I was too late for the best of the breeding-season, though I was successful in obtaining eggs of the Jack-Snipe; and in the following year the late Daniel Meinertzhagen spent a season there on my advice, making his headquarters at Muunioniska, which was the centre of operations of John Wolley. The difficulty of getting about at such a season of the year in a country where there are practically no means of communication necessarily confined our operations to a somewhat limited area, and we therefore chose the upper waters, where we thought that we should have the best chance of Ducks, Waders, and mountain-birds, although in so doing we